

## **ENDOR and transferred hyperfine interaction of impurity rare-earth ions with nearest diamagnetic ions in crystals**

Falin M., Eremin M., Bill H., Lovy D.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### **Abstract**

The tetragonal  $\text{Er}^{3+}$  ion associated with the interstitial  $\text{F}^-$  ion along the  $[100]$  axis in  $\text{CaF}_2$  is studied using ENDOR. The parameters of the transferred hyperfine interaction and of the nuclear Zeeman interaction of the surrounding fluorine ions are determined. Anomalously large values of the pseudo-nuclear Zeeman effect on the  $\text{F}^-$  nuclei are found. The theoretical analysis of these parameters is carried out in a frame of operator techniques in the theory of transferred hyperfine interactions. A number of useful relations for practical calculations of the values of the local field at ligand nuclei are reported. © 1995 Springer.

<http://dx.doi.org/10.1007/BF03161957>

---